PARTICLE PHYSICS DIVISION OPERATING MANUAL
REVIEW AND APPROVAL RECORD

ENVIRONMENTAL POLICY AND PROGRAM

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PPD Head

PARTICLE PHYSICS DIVISION
ENVIRONMENTAL POLICY AND PROGRAM

INTRODUCTION

The policy of Particle Physics Division (PPD) is to protect the environment by following federal laws, local laws, DOE Orders, and Fermilab policies. Departments and groups shall promote this policy with the assistance of PPD staff members such as the Environmental Protection Officer (EPO) or Senior Safety Officer (SSO). This information supplements Fermilab's Environmental Policy and does not supersede any of the policies found in Section 8000 of the *Fermilab ES&H Manual (FESHM)*.

DESCRIPTION

I. WASTE MANAGEMENT

The PPD Environment, Safety, and Health (PPD ES&H) Group is responsible for overseeing the Division's implementation of its Waste Management Program. Waste Coordinators assist and answer questions concerning waste characterization, labeling, packaging, completion of waste forms and other waste issues. They also review, approve and submit completed waste forms to the ES&H Section for pickup and disposal.

A. Waste Minimization

All groups and departments must minimize the generation of waste. This should be accomplished through education, awareness, recycling, source reduction, and substitution of less hazardous substances. All employees are encouraged to participate and to investigate other methods of waste minimization. The Fermilab programs are described in more detail in *FESHM* Chapter 8022.

B. Process Waste Assessments (PWA)

The purpose of the waste assessment is to examine and analyze information concerning processes, operations, and waste management practices. Information is used to develop a set of waste minimization options, identify those that deserve additional detailed analysis and then aim to reduce and minimize wastes.

One of the first tasks of the waste minimization process is to identify and characterize the individual facility’s waste streams. Building managers, along with the EPO, are responsible for managing waste activities within their locations. They

shall assess all waste streams generated and implement, where feasible, recycling techniques.

C. Waste Generation and Disposal

Waste generators shall comply with Fermilab and DOE policy and will receive training every two years. Generators must properly characterize, identify, package, label and provide temporary storage for waste. Waste generated in a Radiological/Controlled Area requires additional information (i.e. "Hazardous/Radioactive Mixed Waste Certification and Pickup Request Form", etc.) to be completed prior to final pickup.

D. Waste Inspections and Audits

All hazardous and liquid radioactive waste shall be stored in a Satellite Accumulation Area (SAA). As a best management practice, it is suggested that liquids designated as EPA "special wastes" be stored in SAAs as well. A Satellite Accumulation Area is a temporary storage location for small quantities of regulated hazardous waste. These locations shall be at or near the point of generation, under the control of the waste generator, and be protected from the weather.

Building managers and/or waste generators are responsible for inspecting their SAA for compliance with DOE and Fermilab requirements on a quarterly basis. All findings are documented on "PPD Waste Accumulation Quarterly Checklist" forms. Building managers or waste generators are required to correct all findings and maintain documentation.

The division EPO and Waste Coordinators conduct periodic waste audits that include reviews of current waste streams and tours of SAA's as well as discussions with the building manager concerning other waste activity issues. All findings are entered into ESHTRK and tracked to completion by the appropriate PPD Building Manager.

II. AIRBORNE EMISSIONS (CLEAN AIR ACT)

The Clean Air Act is the major federal law that regulates air emissions to protect air quality. The IEPA generally has the lead authority for air quality regulation. Within the Particle Physics Division, a construction permit is obtained from the IEPA before the construction of a new emissions source, the modification of an old source or the installation of any new air pollution control equipment. Operating permits are obtained for new emission sources and air pollution control equipment. Air Pollution Permits have been obtained for gas-fired hot water boilers. Permits are obtained under the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) for radionuclide emissions from beam tunnel ventilation stacks, and are monitored by Beams Division and ES&H Section personnel. Radiological air emissions are reported annually to the USEPA

and DOE. Emissions from other permitted air pollution sources on site are reported annually to the IEPA.

III. SURFACE WATER & SEWER DISCHARGES (CLEAN WATER ACT)

The Clean Water Act is a federal law that regulates discharges to surface water and is concerned with water quality management. The Beams Division Radiation Safety Officer reviews all new target station and beamline designs to insure that any potential influence to surface or ground water is understood and is within the limits prescribed in the Fermilab Radiological Control Manual. All PPD operations involving industrial wastewater discharges via sanitary sewers must be in compliance with the DOE and Fermilab standards. There will be no intentional discharges to surface waters without a National Pollutant Discharge Elimination System (NPDES) permit.

Aqueous process wastewater may be discharged into the sanitary sewers at the laboratory under certain circumstances only. Both general and specific prohibitions apply to potential discharges, and for each such discharge, the responsible department or group in Particle Physics Division must make a decision as to whether it meets the applicable criteria. Potential discharges that do not meet the criteria of FESHM chapter 8025 must be treated as a regulated chemical waste (i.e., packaged and disposed of as either Illinois Special waste or RCRA Hazardous waste). In order to minimize the use of these costly disposal alternatives, each department or group should make every effort to minimize the production of wastes of all kinds, through good housekeeping practices, alternative process chemicals, efficient process controls, and/or more efficient process designs.

<u>General prohibitions</u>

These requirements apply at the point where the process discharge enters the Fermilab sewerage system, i.e., at the point of generation. The following substances are prohibited from entering into the system:

1. Flammable and/or explosive materials
2. Any RCRA hazardous waste
3. Any solids or viscous substances (e.g., garbage, paper, cinders, sand, metal, rags, tar, wood, etc.)
4. Biocides (toxins or poisons) in a quantity sufficient to disrupt the sewage treatment process
5. Storm water, surface water, ground water, roof runoff, subsurface drainage, cooling water or unpolluted process water
6. Any other material that would cause any disruption to the wastewater treatment process, e.g., high
   chemical oxygen demand, high oil and grease, high suspended solids, etc.
7. Ethylene glycol or propylene glycol in any concentration

V. SPILL CONTROL

Local spill plans are necessary in areas where a potential source of a credible spill is identified. A potential source of a credible spill includes chemicals stored or used in quantities of 55 gallons or greater. But, it may also include chemicals stored in containers < 55 gallons if there are a number of containers whose sum quantity is greater than 50 gallons. If it is determined that a spill plan is needed, the departments and groups associated with the spill source will be responsible for writing the local spill plan and providing secondary containment. All individuals having responsibility for working with the spill source (including but not limited to: pouring, pumping, draining, filling, transporting, etc.) must be trained on the spill plan. The spill plan should be posted in a conspicuous place. The spill plan shall be reviewed/updated any time there is a change to the process, or every five years.

As part of a Laboratory program, the PPD ES&H Group investigates all Particle Physics Division sump pit and drain discharge points. Information is documented on a site wide map and assists the Division in determining spill pathways.

VI. NATIONAL ENVIRONMENTAL POLICY ACT (NEPA)

The Division complies with the Fermilab NEPA Policy, described in *FESHM* Chapter 8060. The policy ensures that all activities and tasks which may have an adverse effect on the environment are reviewed by qualified Particle Physics Division and ES&H Section personnel as required. PPD departments and groups are responsible for notifying the PPD Office and the PPD ES&H Group prior to any activities and modifications. **All PPD projects must be reviewed by the Environmental Officer for NEPA**. The review will either identify environmental aspects or state there are no environmental impacts. This review process should begin in the planning stages of PPD projects for timely reporting.

Revision History

Author(s)	Description	Revision	Date
A. Sands	Add document control disclaimer and revision history page	7/31/09	7/31/09